

CAI FR
69C 51

LIBRARY

24 1969

TORONTO


Government
Publications



3 1761 11555653 2

CONSERVATION ACTIVITIES

DEPARTMENT
OF
FISHERIES
AND
FORESTRY



Digitized by the Internet Archive
in 2022 with funding from
University of Toronto

69C51

Canada. Forestry branch
[General publication.]

[6-4]

CONSERVATION ACTIVITIES

1. Role of Forest Canada's staff	4
2. The growth	6
3. Nature of growth	11
4. Long-term view of the forest	12
5. Forest fire control	14
6. Recreation and forest management	17
7. Wildlife in the forest	21
8. Bird life	24
9. How affects wildlife	25

Produced By
The Forestry Branch
Department of Fisheries and Forestry
Ottawa — 1969



conservation activities

index

CHAPTER	PAGE
<i>introduction</i>	iv
1. <i>forest location, ownership and use</i>	1
2. <i>logging</i>	2
3. <i>how trees become lumber</i>	2
4. <i>from wood to paper</i>	4
5. <i>learn to know Canada's trees</i>	4
6. <i>tree growth</i>	8
7. <i>patterns of growth</i>	11
8. <i>living enemies of the forest</i>	12
9. <i>forest fire control</i>	14
10. <i>reforestation and forest management</i>	17
11. <i>wildlife in the forest</i>	21
12. <i>bird calls</i>	24
13. <i>man affects wildlife</i>	25
14. <i>fish life</i>	26
15. <i>forest and game laws</i>	28
<i>references</i>	29

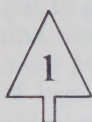


introduction

Produced by the Forestry Branch of the Department of Fisheries and Forestry, in cooperation with the Canadian Forestry Association's Youth Council, *Conservation Activities* is designed to develop in young Canadians a broader understanding of nature and a greater appreciation of their country's most valuable renewable resource.

Conservation Activities is a companion piece to *Forestry Lessons*, also produced by the Forestry Branch. Both publications are meant primarily for use by teachers and youth-group leaders. While *Forestry Lessons*, as its title indicates, provides classroom or "indoor" material, *Conservation Activities* offers instructive and interesting exercises to be carried out on field trips, hikes and camping expeditions. These exercises were provided by the Youth Council, and were tested by youth groups in British Columbia.

These booklets, used together or separately, will help the interested group leader instil in young people a lasting appreciation of the complex and delicately balanced forest community, which is not only Canada's greatest single source of economic wealth, but also the habitat of wild animals, the regulator of our water resources, and a source of enjoyment and recreation for everyone.



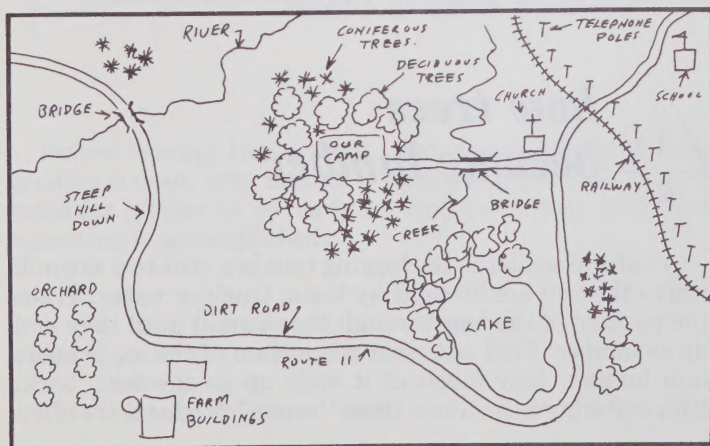
forest location, ownership and use

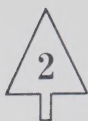
Before undertaking field trips, it is desirable to obtain a large map of the surrounding district, on which to mark the locations and types of forest lands. Different colour shadings on the forested parts of the map may be used to indicate different patterns of forest and land use. Youngsters should understand the ownership of the forests. The local forester can help them mark on the map the forest which is privately owned, and that which is Crown land. He can advise when and from whom permission to enter the forest may have to be obtained.

The map can be marked to show where timber is being cut, where reforestation is in progress, which parts of the forest are parklands, wildlife sanctuaries or government research areas.

Display the map in the classroom or group club room, for reference before undertaking outdoor projects.

A long-term indoor project could be the construction of a sand-table of the district, demonstrating by small-scale models the products and uses of the various forest tracts.



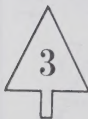


logging

A visit to a logging operation can be of great interest to children. This must be a conducted tour, for safety's sake. Show the children the different types and species of trees being cut. Find out what happens to decayed or defective trees, and whether trees of all sizes are taken. Observe which are the most valuable for cutting, and whether the trees are being "clear-cut" or harvested in some other way.



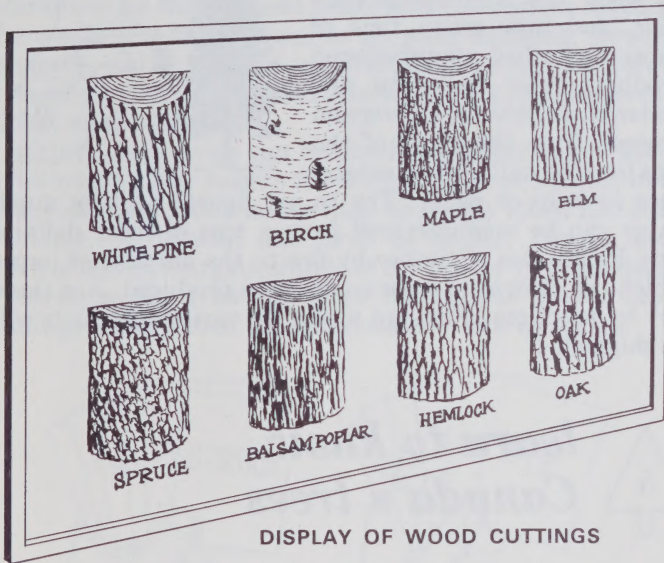
Who selects the trees for cutting, and by what standards? Note how the trees are limbed, trimmed and bucked, which parts are selected for use, what constitutes "slash" and what is done with it. Find out how the logs are moved from the woods to the mill. Special attention should be drawn to fire prevention and protection methods.



how trees become lumber

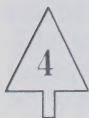
A natural sequel to the logging tour is a visit to a sawmill where the logs are brought by train, truck or water. Trace the passage of the logs through the sawmill until they end up as lumber. Find out what proportion of the log is made into lumber, how much of it ends up as sawdust, bark, trim and edging, and how these "waste" products are often

put to profitable use. Note where the various mill products and residue or "waste" will be shipped and for what ultimate purposes. Samples of cuttings from different species of logs, preferably with the bark still on them, may be obtained and brought back to the class or club room to be set up into a collection for indoor tree or wood identification exercises.



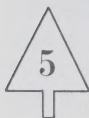
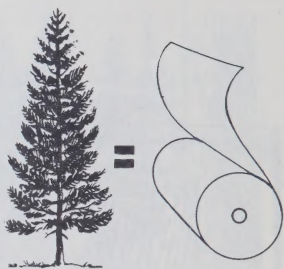
DISPLAY OF WOOD CUTTINGS

Before leaving the sawmill, find out how sorting and grading is done, why lumber is stacked as it is, how long it takes for lumber to be ready for commercial use, and how seasoning is accomplished.



from wood to paper

On a trip to a pulp and paper mill, find out where the logs were obtained and what species are used. Note how many cords of wood the mill needs each year, and how many tons of paper and allied manufactured products come from the raw material. Follow the conversion process, from the entry of the logs into the mill to their emergence as pulp or paper. Try to get figures on how much paper can be manufactured from a tree of some definite size. Relate loss of timber by fire to the amount of paper which the destroyed trees could have produced. Are there any by-products? Find out where the various products will be shipped.



learn to know Canada's trees

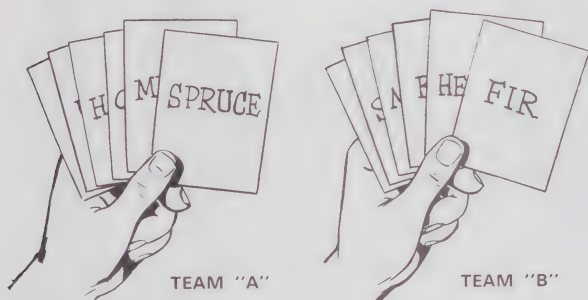
Samples of wood with bark may have been obtained on an earlier field trip, for use in identifying trees or lumber. It is also useful to learn to know trees by their leaves, and by their seeds.

(i) Make a collection of leaves in late spring or summer, when they are full-size. Gather two or three specimens from each species of tree, avoiding insect-eaten leaves or the over-sized ones growing from stumps. As you collect them, put the leaves between newspaper or magazine pages, noting the names of the trees from which the leaves were taken. Rather than collecting ornamental and nursery tree leaves, concentrate on the common commercial species growing in the forest.

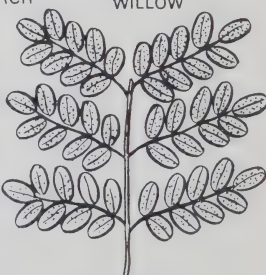
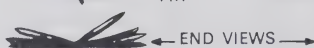
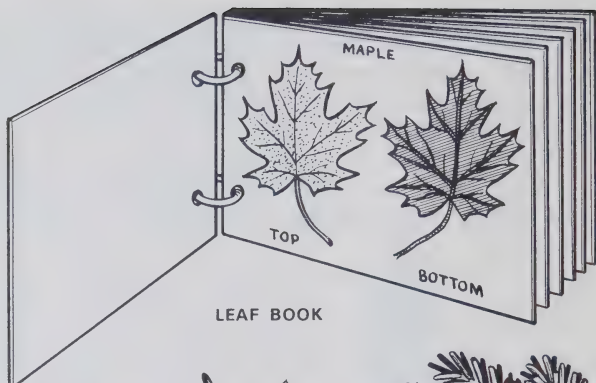
Back in the class or club room, use books or any flat and heavy objects to press down the magazines with leaves in them. Do not remove the weights until the leaves are fully dried. Mount the leaves with cellulose tape on pieces of cardboard or in a scrapbook, two from each tree, one face up and the other face down. Letter clearly on the cardboard or page the name of the tree from which each pair of leaves comes, and identify which are the upper and lower surfaces.

The order or arrangement of the leaf collection can be determined by the different features of the various species. The needle-like leaves, such as fir, pine, hemlock, spruce, tamarack, can be grouped together. Another series of cards or pages may have the broad leaves, like oak, maple, birch, poplar, elm, ash, etc.

In turn, each group can be divided into sub-types, such as flat needles like balsam fir, or more than two-sided, like spruce needles; broad leaves may be deeply lobed like oak or maple, or unlobed like birch or poplar. Length and width of leaves, margins, simple or compound arrangements of leaves as they grow out of the twig, are all further sub-headings under which the leaf collection can be set up.



(ii) Practice in leaf identification may be gained by playing a game. Divide the class or group into two teams and give each team a list of species found within a reasonable distance of the play area. On signal, each team tries to collect leaves from each of the trees on the list. Special care must be taken that branches, saplings and shrubs are not harmed when picking the leaves. The first team to report to the teacher or leader with all the leaves on the list is the winner. The game can be repeated by exchanging the lists between the teams.



MULTIPLES

SEED COLLECTION



OAK



MAPLE



ELM



PINE CONE



PINE SEEDS



SPRUCE CONE



SPRUCE SEEDS

(iii) Preparing a seed collection is also of considerable interest. Seeds can sometimes be exchanged with members of conservation youth groups from other areas and other provinces. Go into the forest and collect tree seeds from the ground and from living trees. If from trees, note the species when collecting. Stick the seeds to a board with glue or cellulose tape, or place them in small glass vials, and label them.

Some seeds may be gathered from the ground by scraping away the leaves from the forest floor. Sometimes seeds may be found in piles or stored in hollow trees — obviously the food cupboards of various types of small animals.

Seed collections may be grouped and the groups subdivided in the same way as the leaf collections. Seed cones from conifer trees can be grouped separately from broad-leaved trees; a sub-division can show which seeds are equipped to be carried by the wind, and which are not.

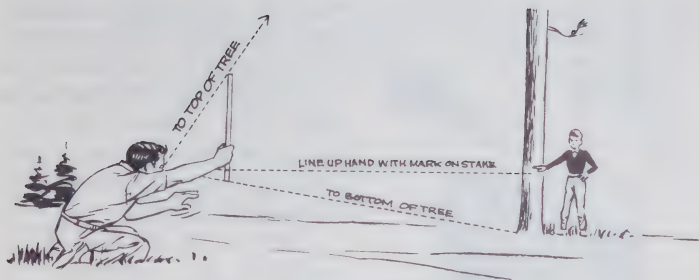
This activity is useful in illustrating how effective Nature is in planting new forests by her own methods — which is still how most forests perpetuate themselves in Canada. On field trips, pay special attention to evidences of Nature at work; when you look under leaves for seeds, see if you can find evidence of seeds which have germinated but not escaped from the leafy litter. Compare the amount of young seedlings in dense forest with those in openings or cleared areas. Count carefully the young seedlings in a few square feet of forest and translate this into so-many trees per acre. Note how the bark of young trees is very thin and how their foliage comes right to the ground. This is why fires which do not harm large trees frequently kill off many small ones.

NOTE: Tree identification will give you satisfaction throughout your life. Suitable reference material should be added to your library.

tree growth

Having practised leaf and seed identification, the children can now learn about the growth and age of trees. In Activity No. 2 on logging practices, the children learnt that trees are not cut until they reach a certain size or age — unless they are diseased or insect-infested. On this trip into the forest, the children can be shown how to measure trees and how to determine their ages.

(i) To measure the height of a tree, take a stake about 25 inches long and mark off one-tenth of its length ($2\frac{1}{2}$ -inches) from the bottom. Select a tree that is straight and not leaning. One child stands beside the tree and another holds the stake. The child with the stake holds it straight up and down at arm's length in front of him, and moves back from the tree until the top of the stake is sighted in line with the top of the tree and the bottom of the stake sighted in line with the bottom of the tree. Without changing position, the stake-holder directs the child beside the tree to move his hand up and down the trunk until his hand is in line with the mark that is $2\frac{1}{2}$ -inches from the bottom of the stake. Mark the position of the hand on the



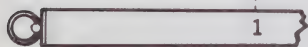
tree. Measure the distance of this spot on the tree to the ground. The height of the tree in feet is then 10 times this measured distance. (It may be convenient to use either a different length of stake, or a different proportion of the marked-off part of the stake; by applying the ratio shown, the system will work in any case).

(ii) To measure the diameter of the tree (which is known to foresters as "diameter at breast height" or "d.b.h."), a point about $4\frac{1}{2}$ -feet from the ground may be selected. Take an ordinary linen tape measure, or even a fairly

heavy cord which will not stretch. From one end mark off, on the blank side of the tape, units each $3\frac{1}{7}$ -inches long, and number the marks successively "1", "2", "3", etc. Measure 'round the tree trunk and read off the diameter from the number opposite the zero end of the tape. Foresters, of course, use a tape measure already specially calibrated.

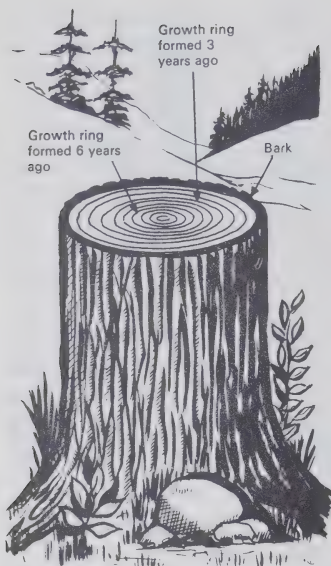


ORDINARY TAPE



DIAMETER TAPE

(iii) In order to help children estimate the age of a tree, and how much it grew in diameter in each successive year of its life, find a logging area or any spot where a sawn-off tree stump of good diameter and in good condition, and preferably not more than three feet high, can be examined. Show the children the rings on the top of the stump; they are caused by differences in wood produced at the beginning and at the end of each growing season. The wood laid down in the first part of the growing season

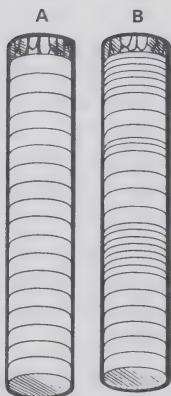


(spring and early summer) usually differs in appearance and texture from that laid down later on in the same year. The contrast between the early and late wood produces the annual growth ring effect.

The age of the tree is determined by counting the number of annual rings. By comparing the varying widths of the rings, it may be seen in which years the tree enjoyed good growth, or suffered retarded growth due to unfavourable conditions, such as lower than normal rainfall, competition from nearby trees for soil moisture and nourishment, or attack by insects or disease.

By counting the rings from the bark towards the centre, a child can see for example, how old the tree was when he was born. Children will enjoy marking the rings coinciding with their birthdays, or with any other outstanding dates in their lives or in the community's history.

A forester does not have to cut down a tree to learn its life growth story. The differences in various years' growths are important to him, as he can use them to find out the health of living trees, the best age to cut them, whether they are growing well or poorly, and other useful information. Instead of looking at stumps, the forester uses



INCREMENT BORINGS

A—Fast growth

B—Fast growth for first 6 years followed by 7 years slow growth, etc.

an increment borer which he screws from the outside into the heart of a living tree to take out a pencil-sized sample of the wood, like using an apple-corer. This practice causes no damage to the tree.

7 *patterns of growth*

The object of this activity is to show children that trees vary in their requirements of soil moisture, nutrients and light. Variations can sometimes be seen clearly as you move away from the shores of a lake or river. Generally the farther you go uphill away from water, the drier the growing conditions. There is often a change of soil conditions from lowland to upland, reflected in different types of vegetation or trees seen in swamp areas compared with higher country.



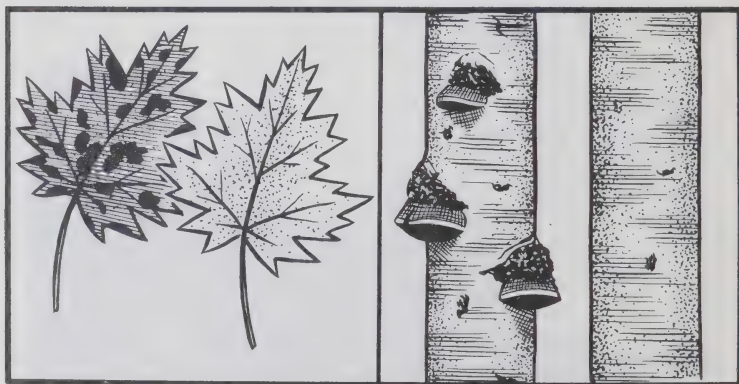
Start the field trip at the shore of a swamp, brook, river or lake. Assign to each one or two members of the group an area or strip of land three paces wide and leading in a straight line from the waterline to the highest visible elevation. (A pace, consisting of two normal steps, is a definite unit of measurement in forestry and is usually

counted each time the left foot hits the ground. Each person should count his paces per 100 feet). As each member of the group follows his allotted strip, all plants and trees are identified and listed. The gradual transformation from rushes, willows, cedars, and other typical moisture-loving growth, to other types as the ascent is made, will be noted. The distance and, if possible, elevation from the waterline, at which each type yields to a new one should be observed.

The exercise can be concluded in the class or club room, where notes may be compared and a pictorial or graphic chart prepared to show the transformation in tree and plant life from water level to highland.



living enemies of the forest

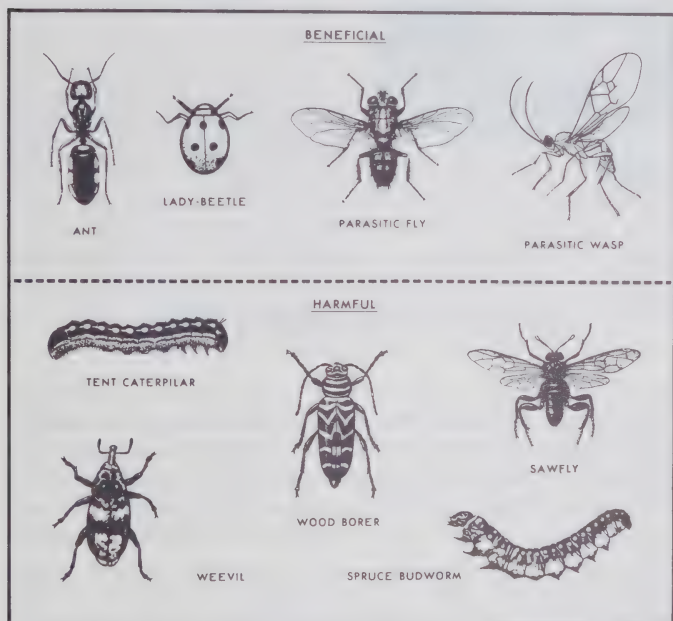


Children should become familiar with the forest enemies against which foresters, conservationists and scientists wage an endless war.

(i) Arrange a field trip with the local forester or other conservationist who can explain how trees are damaged by insects and disease, and who can help collect samples of infested and diseased wood to be exhibited in the class or

club room. The children should make notes of what the forester says about insects and disease, and the methods used to combat them.

The group should find and identify some 10 different insects — or as many as can be located in the forest area. Note where each insect is found, what it eats, whether it damages or benefits shrubs and trees, and in what ways. If it is harmful, find out the methods of controlling its damage to the forest.



(ii) A subsequent classroom project consists of preparing an exhibit of the insects (or insect photographs), with notes on cards of what has been learned about them. Another project could be the preparation of an essay by each child on the life history of an important insect pest found in the area. Children can be encouraged to enlist their parents' help in spraying shrubs and trees around their homes to control insects or disease. Children should be impressed with the need for CAUTION in handling insecticides. They can be very dangerous if carelessly used.

(iii) Man, too, can be an enemy of the forest. Among the harmful practices in which many people indulge, is the

pointless hacking or carving of initials, dates, interwoven hearts, etc., deep into the bark and wood of trees. A useful activity for the class or group is to obtain the co-operation of local forest officials in putting up "carving posts" in popular recreation or camping areas of the forest. The posts could be erected in the name of the group, for youthful visitors to leave their marks upon, instead of on the living trees. As time goes by and the posts become covered with carvings, new ones can be installed.



9 *forest fire control*

The danger of forest fires cannot be accented too sharply. A field trip to a forest fire lookout, or to a forest ranger's or fire warden's headquarters can be highly beneficial. With the help of the fire protection officer, children should note the following points: the periods when forest fires start most easily; the number of fires started during special periods such as holidays; the number and causes of forest fires each year in the area; how fires are detected and reported; how fires are controlled, step by step. Note details of the equipment used, and how men, tools and supplies for fire-fighting are obtained.

Children should be informed regarding forest fire damage: loss of valuable timber; effects on both young growth and soil; setback in natural forest development; destruction of wildlife shelter, and of countless animals, birds and fish. Amongst the very young, the latter values are particularly important.





**BREAK YOUR
MATCHES!**



**SQUASH
CIGARETTES!**

(i) Arrange a practical demonstration by the class or group on campfire safety, before a service club or PTA group. Build a small cooking fire in an outdoor fireplace using only twigs and charcoal. Show how such a fire can be used to burn paper and garbage left over from the picnic or camping trip. When burning paper be careful to hold it down in the fire with a stick, or else air currents may carry the flaming paper into the nearby forest and set it ablaze. Show how to put the campfire out — dead out!

(ii) Invite the local forester to give a firefighting lecture and ask every child to invite his parents and neighbours. Busy the children making posters or charts on how to prevent forest fires. Some of them can recount what they have learned from the forester, relating this to the posters and charts they have made.

(iii) At the start of the forest fire season in your area, prepare a forest fire prevention exhibit for display in store windows, theatre lobbies, and in schools. Your forester or forest ranger can tell you of the proper time to stage this



KNOW WHERE IT IS KEPT!

exhibit. The posters and charts should display prominently a set of rules on what to do upon discovering fire in the forest.

The rules may be summarized as follows:

1. Send someone AT ONCE to notify the nearest forest ranger, fire warden, or other forestry official.
2. If the fire is small enough, and water is handy, try to put the fire out.
3. Clear the leaves, small undergrowth and forest "litter" away from the fire, all around it, so there will be nothing to feed the flames, in a band at least 3 feet wide.
4. Dig a 6- to 12-inch wide ditch about 6-inches deep all around the fire, in the band that has been cleared of litter.
5. If you can get down to mineral soil, or sand, with no flammable material in it, and there is no water available, try to smother the fire with soil or sand.
6. DO NOT ATTEMPT TO FIGHT THE FIRE IF IT IS TOO BIG FOR YOU! JOIN YOUR MESSENGER IN RUSHING TO SPREAD THE ALARM.

Additional posters and forest fire prevention material can be obtained from the Canadian Forestry Association, from your provincial department of lands and forests, or from the federal Department of Forestry and Rural Development.



STAY WITH YOUR LEADER!

reforestation and forest management

How does man restore the trees he has cut, and what can be done to compensate for losses by fire, insects and disease? There are several activities which will help provide the answers.

(i) A visit may be made to a managed public or private forest or watershed area. Ask the manager or supervisor to explain how the forest can grow repeated crops of timber, and how Nature usually provides a new crop of trees after orderly cutting operations or a fire. Ask him about plans for future timber-cutting.

(ii) Visit a reforestation area bearing trees ten or more years old. Get the children to write reports on the type of soil, species of trees, spacing, height, age of the trees, and why the plantation was established. The advice of a forestry official will be needed to supply at least some of the answers. The plantation may provide Christmas trees, posts, poles, pulpwood or lumber. The planting may also have been done to prevent erosion, protect a spring, provide a windbreak, or to make good use of land that was not otherwise productive.

The children should make notes on the provisions made for protection against fire. Where the tops of the trees are crowded together with intertwined branches, ask if there are plans for thinning. Note if the plantation area may be extended. Examine the ground to see if a satisfactory forest floor of decaying leaves, twigs, etc., and humus is being developed.





(iii) Arrange a field trip to a forest tree nursery so the children may learn first-hand what species are grown, how long trees grow in seed beds, and in transplant beds. How are the beds prepared, and how are seeding, lifting, watering and transplanting done? Find out what is done to protect the young trees against rodents, birds, insects, disease, frost and fire. Note the nursery's capacity and annual production. See how the young trees are shipped, and where, for final planting.

(iv) If possible, obtain some seedlings from the nursery.

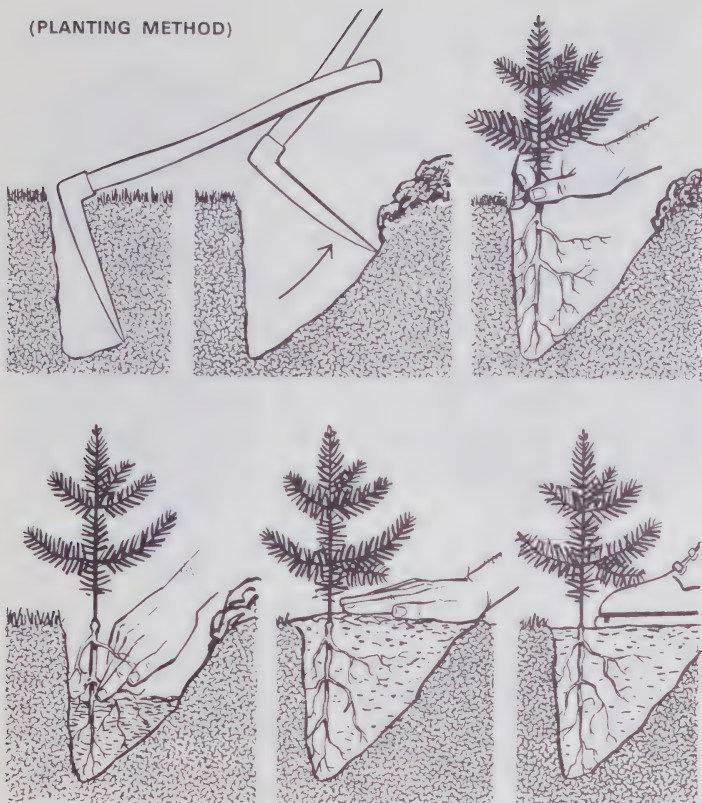
Make a field trip to an area suitable for growing trees, and plant the seedlings as part of a forest management plan. This could be done on public lands, campsites, tree farms or small woodlots. The children can put to use what they have learned about transplanting at the nursery.

(v) Another planting exercise may be undertaken over a period of years. The children can highlight one tree species each year. First, they gather the seeds, plant them in a city greenhouse or arboretum, and later replant them in pots for distribution to friends, neighbours or the public to transplant in their gardens. Each child should plant one or more of the seedlings in his own garden. Planting instructions should be given with the seedlings.

(vi) A useful and interesting field exercise during good weather consists in helping to thin and prune trees on public or private land. Make sure that you have the property-owner's permission to undertake this exercise. Also the local forester should accompany the group to supervise the whole operation.

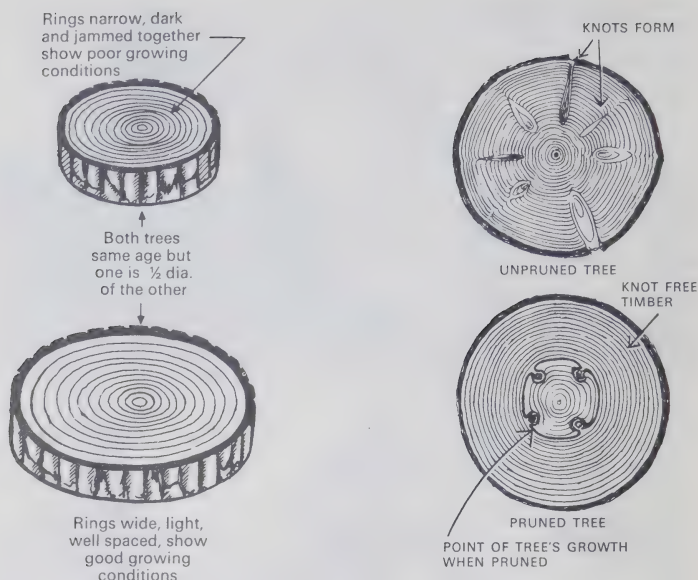
Thinning is done in order to assist growth, when trees start to crowd together and compete for available light and soil nutrients. The removed trees may be sold for pulpwood or lumber, giving early financial returns from

(PLANTING METHOD)



the plantation. The trees left standing are usually the better-formed ones and the increased space allows them to grow faster.

Pruning is done to improve the quality of the trees. Branches of growing trees show up as knots in sawn lumber. If the branches are pruned, the wood which forms over the branch trace is free from knots. Knot-free lumber is much more valuable than knotty lumber. Pruning must be done under skilled supervision. Youngsters old enough to be entrusted with the operation must learn the essential rules: do not prune until a tree has reached at least 2 inches diameter; always cut branches flush with the trunk, and cover the scars with tar or creosote; never prune more than one-third of the crown of the tree, as the leaf mass must remain in proper balance with the root system.



(Both thinning and pruning are done with the original purpose of the plantation in mind. Generally speaking, the expense of these operations is only justified if it results in a more valuable crop).



wildlife in the forest

The forest not only provides many products for man's use, adds to his enjoyment of nature and regulates water supplies — it also provides a home for wildlife. Some animals prefer dense forest while others live in open areas, or areas where young growth is most common. The streams and lakes — and the fish found in them — are largely dependent on the forest for their very supply of water. We must learn more about this whole community — not only the trees but also the animals and fish whose home or habitat depends upon the forest.

(i) The first field trip can be to an area of the forest where wildlife can be observed quite easily. During the expedition, list the most commonly found trees, shrubs, flowers and grasses; report on the kinds of soil and rocks; describe streams or lakes. Make lists of wildlife seen or

known to live in the area, including mammals, birds, reptiles, amphibians, fish, molluscs and insects (the last-named may already have been covered in Activity No. 8). Note characteristics of the forest area such as temperature, prevailing winds, rainfall, altitude, geology and tides (if any), together with the effects they have on the nature of the area.

On returning to the class or club room, discuss and consolidate the lists and notes. Look up books of reference on prevalent forms of animal life in the area, to note whether they are game



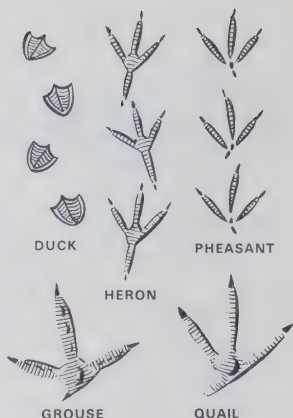
or fur species, or scavengers, and what are the best ways to protect them.

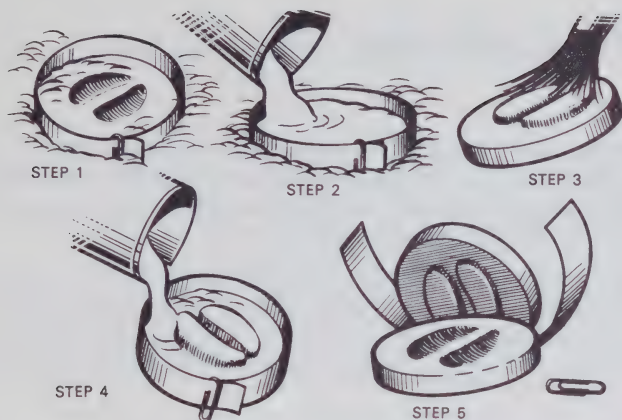
(ii) Another field trip can be made for the purpose of seeing and identifying as many different species of wild animals as possible. Look for and learn to recognize signs and tracks of each animal; if possible, take photographs of the animals. Hunting with a camera is something everyone can do; hunting with a gun is best left until youngsters are old and wise enough to know and obey the safety "do's" and "don'ts" that so many people often overlook with fatal results.

(iii) A special exercise consists in seeking out and identifying animal tracks. Wet or damp ground, along stream and pool banks or in marshy places, is the best terrain in which to look for tracks. Try to determine what animal made the tracks, whether they are "fresh" or old, and if the animal walked, hopped or bounded, slowly or fast.

Estimating the age of tracks involves consideration of the type of soil, recent rainfall, water levels of streams or ponds, and extent of exposure to sunshine. Even tracks of worms and other crawling things make interesting patterns and tell stories of wild-life habits. There are many books of reference available containing pictures to help the children identify animal tracks.

(iv) Making plaster casts of tracks is another fascinating activity. Place a wall or collar of cardboard or tin around the track, in the form of a complete open-





MAKING A PLASTER CAST
OF A FOOTPRINT

ended cylinder or square. Mix plaster of paris with water in a clean can to the texture of smooth pancake batter. Pour it at once into the track until it fills the collar solidly to a depth of about half-an-inch. When the plaster is hard, lift collar and plaster carefully from the track. Remove the collar, use water to clean the underside of the cast bearing the imprint of the track, and trim off rough edges by careful scraping. This is called a negative cast, and looks just like the animal's actual paw or hoof. A waterhole where animals drink is an excellent place to find tracks for casting. Repeated trips to the waterhole will provide a continuing record of the different animals that go there; a list can be kept, and tracks cast.

(v) In order to make positive casts, showing the track made in the ground by the animal, first coat the negative cast with vaseline. Then pour fresh-mixed plaster onto the negative cast; when it has hardened lift the positive cast off the negative, and trim off rough edges.

(vi) An effective display for the children to prepare for parents' nights, or other special occasions, consists of a patch of soft earth in a large wooden frame, into which negative casts have been impressed. Another exhibit can be arranged of positive casts which have been coloured to resemble the mud around the waterhole. Cards identifying the creatures whose tracks are displayed should be placed below each imprint or cast.

Learn to recognize bird calls. During trips into fields and forests, draw the group's attention to different birds as their calls are heard. After a few expeditions most bird cries will be fairly easy to recognize.

An entertaining game on this subject can be played either outdoors or in a large room. Two chalk lines or lengths of tape or cord are drawn at each end of the play area. Divide the group into two teams of equal numbers,



each team representing two or more different birds. A player who is a fairly fast runner is selected to represent the "bird of prey". The teams line up facing each other, about ten feet apart, with the bird of prey in the centre midway between the lines.

The teacher, leader, or member of the group most adept at imitating birds, gives the call of one of the birds represented by either team. As soon as the call is heard, the team whose bird it is runs to "seek cover" behind the line at the end of the play area. The bird of prey tries to catch a player before he crosses the line. The caught player drops out of the game, which continues until only one player is left besides the bird of prey. The survivor then becomes the bird of prey, the birds are redistributed between the teams, and the game starts all over again.

How do man's activities in the forest affect the natural environment of wild animals, and what can be done to compensate for changes man has made to the animals' forest home? Man changes the landscape wherever he lives or works. This change in turn influences the shelter and food available to wildlife. In many cases, man's activities do create conditions more favourable to wildlife, because young growth and the lower branches of young trees in a cut-over area frequently encourage wildlife. When swamps are drained, streams dammed, and brush cleared along roadsides and fences, man also disturbs the wildlife habitat.

(i) Make a field trip to uncultivated farm areas, along fences, beside fields or highways and along the margins between woods and open areas. Let the group plant wind-breaks, hedgerows, and other suitable cover for wildlife. The most suitable plants for this activity are fruit-bearing shrubs with dense growth.

(ii) A similar exercise may be carried out in clearings in the forest, and in fields or lots near woods or streams, where brushpiles can be built to provide cover for wildlife. A brushpile is just that: a pile of brush, sticks, and limbs with branches and twigs intact. Make each pile from 15 to 20 feet across and from five to six feet high. Locate the



piles so that small game need not cross large open spaces to reach cover. These piles are easy to build, but their value to small animals lasts for years.

NOTE: In both the foregoing projects, the advice of your local forester or wildlife expert, and the permission of the land-owner, should be obtained beforehand.

(iii) The presence of cattle has a great effect on wildlife. Make a field trip to an ungrazed area of woodland, then to another area which has been grazed over for a long time by cattle. In each area — which should consist of about four acres — make a list of the kinds of birds, animals, insects and wild flowers you see, or of which there are signs or tracks. Then compare — and you will see that the wildlife, as well as the young forest growth, has been considerably reduced in the grazed area.



UNGRAZED WOODLOT

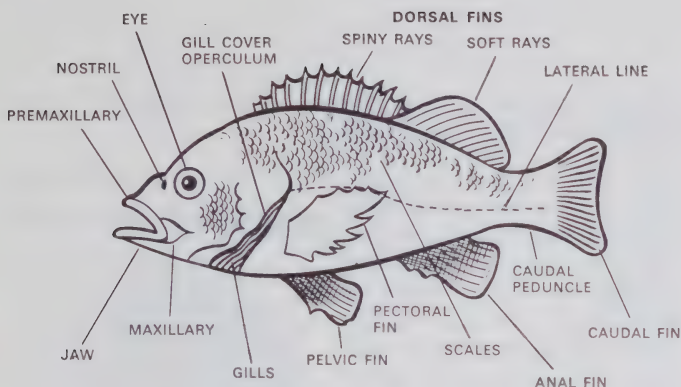


GRAZED WOODLOT

14 *fish life*

Fish are an important form of wildlife, and as much as possible should be learned about them.

(i) Visit a fish hatchery. If none is available, a natural history museum or pet shop will serve the purpose. Examine the shape, colour, form and parts of the fish. Help the children find out why the parts of the fish are shaped as they are, and how they help him in his way of life. Find out about spawning and spawning beds, and about the habits and favourite food of the fish.



PARTS OF A FISH
(ROCK FISH)

(ii) An activity for which permission must first be obtained from your provincial conservation officer or other appropriate authority, consists in planting a streambank to control erosion and to help keep the stream clear. Such planting can help improve the water running from the soil into the river, as well as provide cover for some kinds of wildlife. One of the easiest trees to plant is the willow. Cut, from a mature willow tree, shoots of last year's growth about one-half-inch in diameter and 6-inches to one-foot in length. Select a bare streamside spot for planting. Stick the cuttings in the water's edge about 2-inches apart and push the shoots down to water level. Spring or fall planting will give best results. If planting in an area open to



cattle, it would be advisable to erect a fence to protect the willows from grazing stock.

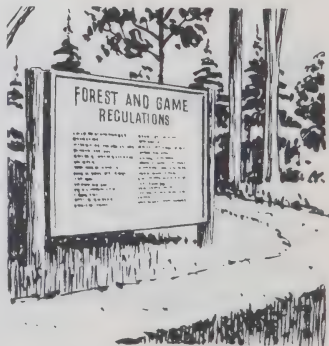
(iii) Fish, like land animals, need protection and homes. After obtaining permission from the conservation authorities, tie bundles of brush together in loose, mixed-up piles. Sink the piles in the water and anchor them with heavy stones, or with green sticks bent over the tops of the piles and secured at each end.



forest and game laws

Wise use of the forests, and of the wildlife that inhabits them, is the responsibility of every Canadian. The schools and the various youth groups can assist in giving young people a proper understanding and appreciation of the national forest heritage.

Take the children to the public library, provincial game department, lands and forests department, or local sportsmen's club, to learn why there are laws to protect the forests and the wildlife that inhabits them. There are forest fire, property, hunting, fishing and trapping laws and regulations to be learned and respected. The conclusion of this series of activities could be for each child to summarize the important parts of the forest and game laws which affect him.





references

Teachers and group leaders may wish to obtain further forestry and wildlife publications to assist them in conducting the activities described in this booklet.

A list of "Selected Forestry Publications", suitable for use by teachers, students, naturalists and the general public, giving titles and brief descriptions of publications issued by federal and provincial government departments, as well as by associations directly concerned with forestry education, is available on request from the Forestry Information Service, Forestry Branch, Department of Fisheries and Forestry, Ottawa.

Publications dealing with wildlife, fish and game, may be obtained on request from the provincial government departments in charge of wildlife administration, and from the Natural History Branch, National Museum of Canada, Ottawa.

Publications on wildlife in the National Parks and in the Yukon and Northwest Territories, and on migratory birds, are available from the Canadian Wildlife Service, National Parks Branch, Department of Indian Affairs and Northern Development, Ottawa.

notes

notes

notes

©

The Queen's Printer, Ottawa, 1969

Cat. No.: Fo 72-269

